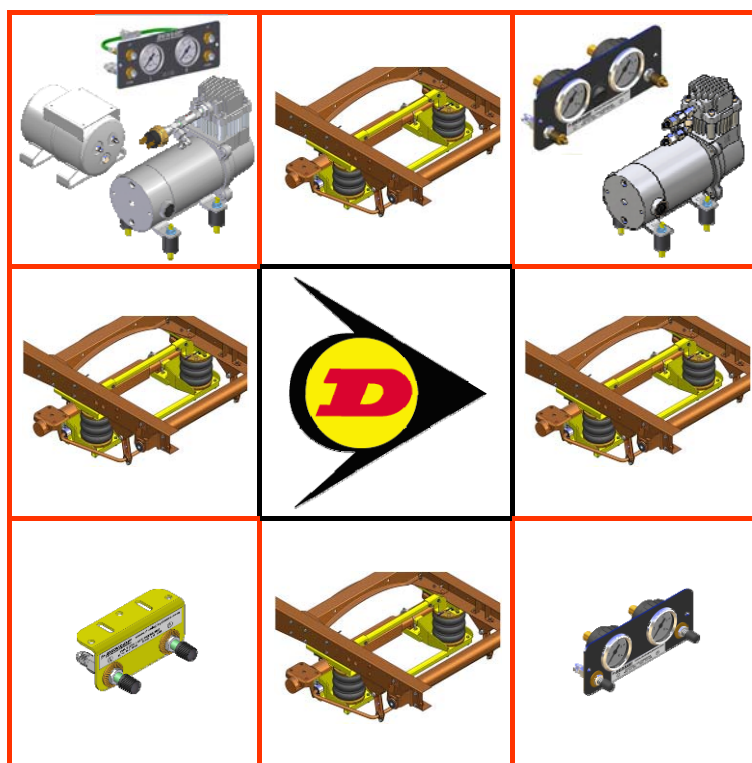


Installation Manual

L.IVE.35.C.M & L.IVE.C.C.M

Iveco Daily 30-8 / 49-12 (1985—1999)

Iveco Daily 35C / 55C (1999 onwards)



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1. FOREWORD

This manual provides instructions for the installation of an auxiliary air suspension kit, developed specifically for the elderly Iveco 30-8 till 49-12 and the Iveco Daily 35C till 55C. To ensure correct installation of the kit, it is strongly recommended that these instructions are read thoroughly before commencing any installation work. Installation should only be carried out by a suitably qualified mechanic or specialist installation facility. Dunlop Systems and Components will not accept any responsibility for faults or defects arising from incorrect installation, which automatically renders the guarantee invalid.

IMPORTANT : Manufacturer's Declaration Form

A manufacturer's declaration form is provided with your kit. Following installation of the kit please ensure that this form is completed and signed by a qualified fitter, and that a copy is returned to Dunlop Systems and Components by post, fax or e-mail.

2. INTRODUCTION

Thank you for choosing an auxiliary air suspension kit from the range offered by *Dunlop Systems and Components*. Auxiliary air suspension is fitted in tandem with the standard steel springs of the vehicle suspension, and provides enhancements in terms of both the stability of the vehicle and the comfort of the passengers...

Vehicle Levelling

Simply by varying the air pressure in the springs, the vehicle can be levelled both front-to-rear and side-to-side. Keeping the vehicle level optimises stability, ensures correct headlamp beam distribution and reduces tyre wear arising from uneven distribution of weight.

Straight Line Stability

Straight line stability is greatly increased at higher speeds, and when subjected to buffeting from cross-winds or large overtaking vehicles.

Reduced Body Roll

Body roll when cornering or negotiating roundabouts is significantly reduced.

Fatigue Reduction and Wear Compensation

Suspension fatigue is reduced, so helping to prevent leaf springs from sagging under repeated or constant loading.

Any sagging already present can be compensated-for. This is a particular benefit for motorhomes, which are always fully laden.

Ride Comfort

Air springs help to absorb shock loads from uneven road surfaces, therefore general ride quality is much improved.

3. VERY IMPORTANT NOTES



Gross Vehicle Weight (GVW)

Air assist kits are not in themselves designed to increase the gross vehicle weight (GVW) rating of a vehicle. They do not legally allow for carriage of a load greater than the carrying capacity stated on the data plate of the vehicle.

Do not exceed the maximum load specified by the vehicle manufacturer...

- ◆ to avoid compromising passenger safety
- ◆ to prevent possible damage to the vehicle
- ◆ for legal reasons

Vehicle Upgrading

Despite the above words of caution, it is possible to upgrade the weight rating of your vehicle. This must be carried-out by a specialist supplier that will...

- ◆ carry out any necessary modifications in addition to fitting the air assist kit
- ◆ complete documentation as necessary to inform the Vehicle and Operator Services Agency (VOSA) – a mandatory requirement
- ◆ supply and fit a new weight plate to replace the original plate supplied with the vehicle

This process applies to United Kingdom registered vehicles. The process in other countries may be different.

Safety Guidance Note

The following very useful guidance note is available for free download from the *Health and Safety Executive (HSE)*...

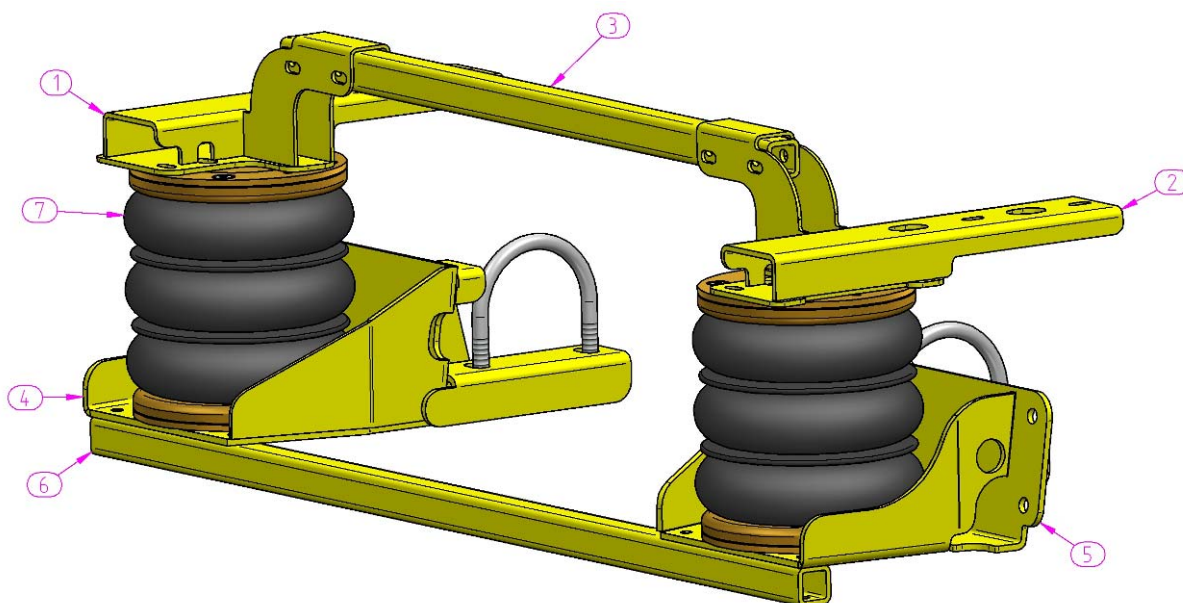
PM85, July 2007 *Safe recovery (and repair) of buses and coaches fitted with air suspension*

The uniform resource locator (URL) for this document is...

<http://www.hse.gov.uk/PUBNS/pm85.pdf>

4. CONTENTS OF THE AUXILIARY AIR SUSPENSION KIT

Your kit should contain the parts below. If this is not the case then please contact your dealer and replacement parts will be provided as soon as possible.



Ref.	Part No.	Part	Count
1	32.03.00.1.01	Upper Bracket, Left	1
2	32.03.00.1.02	Upper Bracket, Right	1
3	32.03.00.1.03	Upper Cross Bar	1
4	32.03.00.1.04	Lower Bracket, Left	1
5	32.03.00.1.05	Lower Bracket, Right	1
6	32.03.00.1.06	Lower Cross Bar	1
7	OP.LB.170-3.CPL	Air Bellow 170/3	2

Also contained within the kit of parts are the following:

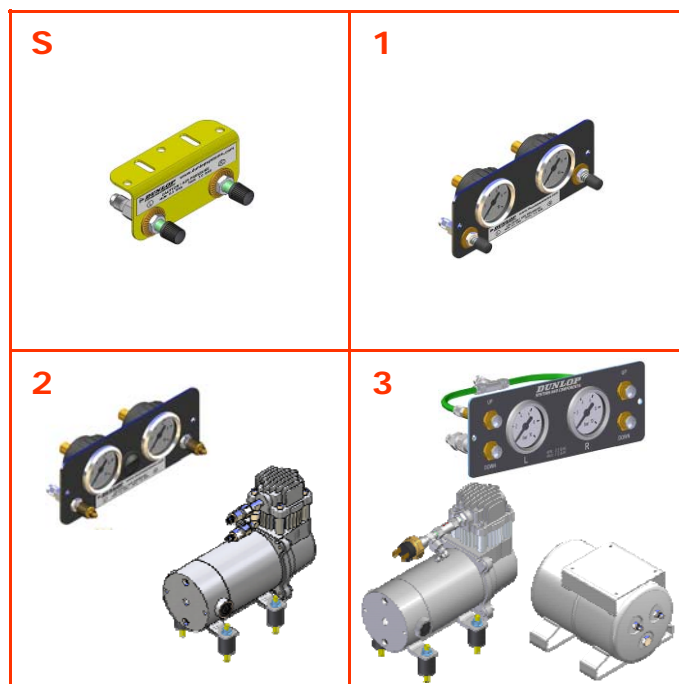
- * All necessary mounting materials
- * 1 Wiring Harness
- * 1 Blue Air Hose (right)
- * 1 Black Air Hose (left)
- * Cable Ties

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For inflation of the air suspension you will have inflation valves (S) or option 1, 2 or 3.



- S. **Standard** : Inflation valves
- 1. **Option 1** : Gauges with valves
- 2. **Option 2** : Gauges with valves and compressor
- 3. **Option 3** : Gauges with valves, compressor and tank

5. INSTRUCTIONS FOR INSTALLATION



Preparation and Precaution

Before beginning installation, ensure that you have sufficient clearance between the axle and the chassis (at least 25cm). Use a jack if necessary. Install at one side of the vehicle at a time.

Pay attention to your safety at all times during installation - always use axle stands to support the vehicle!

5.1 Recommended Tightening Torque

During fitting of the air suspension system, it is recommended that nuts and bolts are tightened in accordance with the following table...

METRIC TORQUE CHART in N.m			
SIZE	CLASS 8.8	CLASS 10.9	Aluminium and PA6G
M6 x 1	10	14	4
M8 x 1.25	23	34	9
M10 x 1.5	48	67	18
M12 x 1.75	83	117	31
M16 x 2	200	285	80

- When both the bolt and nut are made from steel use either class 8.8 or 10.9
- For all other materials, tightening torque is left to the discretion of a person skilled in the art

5.2 LSV distance check IVECO 30-8 / 49-12

This needs only to be done when the vehicle has no ABS.

- Check if the vehicle is approximately on it's daily weight.
- Measure the distance between the bottom of the vehicle and the joint of the LSV rod. Write it down, you need it at xxx on page xxx.

Upper joint of the LSV –rod



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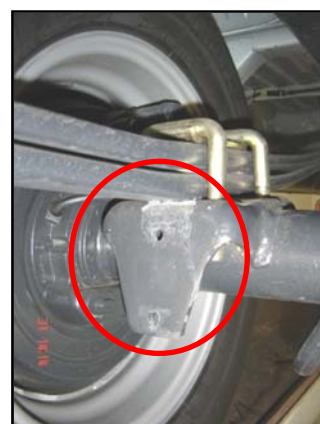
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5.3 Lower Bracket

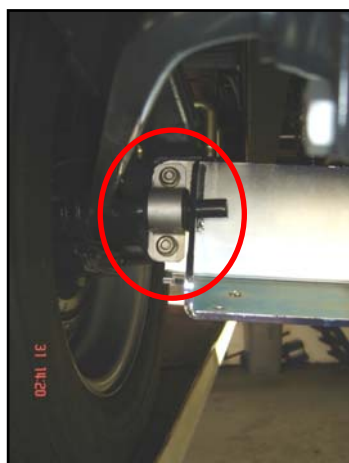
1. Remove the rubber bump stop hanging from the chassis on each side



2. Remove the two bolts from the stabilizer bar mounting bracket on each side of the axle



3. Reattach the stabilizer bar to the axle via the mounting brackets, at the same time attaching the lower brackets of the suspension kit. The original bolts may be used. Finger tighten only at this stage.



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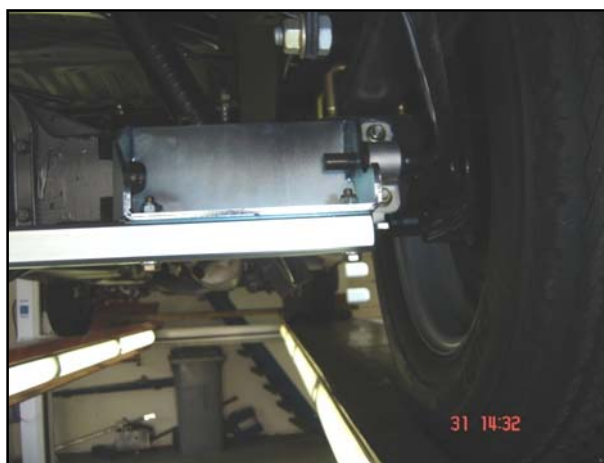
4. Attach the lower cross bar to the lower brackets, in each case using 2-off M8 x 50 bolts with support rings and self-locking nuts. Finger tighten only at this stage.



5. Temporarily remove the nuts from the M12 U-bolt that straddles the axis at each end. Pass the bolt through the holes in the lower bracket extension and then reattach the nuts in order to secure the bracket against the axle. Finger tighten only at this stage.



6. Tighten the nuts to the stabilizer bar bracket and the lower cross bar, so securing the lower bracket.

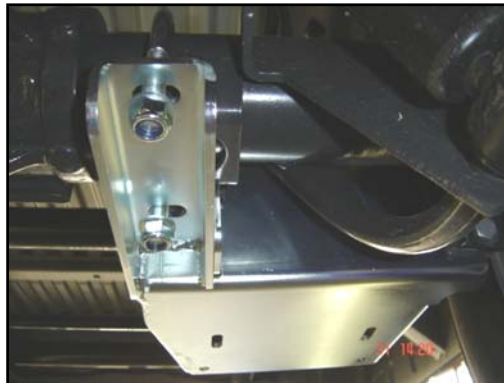


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7. Tighten the nuts to the U bolts.



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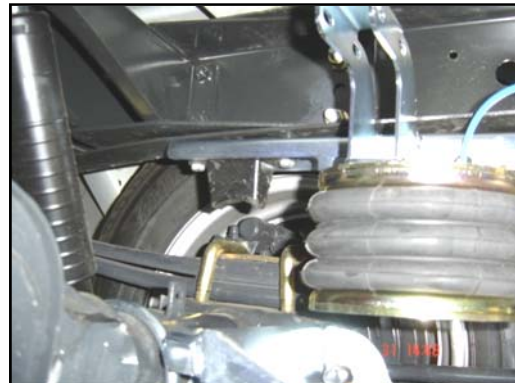
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5.4 Upper Bracket

1. To each of the two air bellows, connect a hose and attach the upper bracket using two M8 x 16 bolts and M8 washers. Do not tighten at this stage because the bellow may require alignment at a later stage (see step 4).



2. Attach the upper bracket to the chassis along with the bump stop. The original bump stop bolts and nuts can be used.



3. Attach the upper cross bar between the two upper brackets of the suspension system using M8x55 bolts with support rings and self-locking nuts. Before tightening the bolts to secure the upper brackets, ensure that the underside of the u-shaped part of the brackets is in contact with the upper face of the cross bar - use a clamp if necessary.

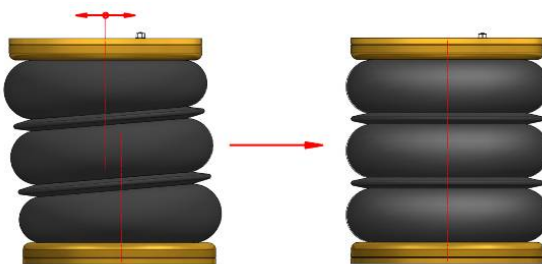


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4. Position the vehicle on its supports until the height of each bellow is about 22cm (i.e. the height that the bellows will subsequently be when the vehicle is standing at ride height). Since an empty vehicle will always stand above ride height, it is likely to be necessary to add weight in order to achieve a ride height position. Check that there is ample space between each bellow and its surroundings...
 - ... if so then finger tighten the bellow to the upper bracket
 - ... if not then adjust the position of the bellow relative to the upper bracket until adequate space is achieved (the holes in the bracket are slotted, allowing the bellow to slide a little)
5. Attach the bellows to the lower brackets using two M8 x 16 bolts and two M8 washers, without fully tightening the bolts
6. Check that each bellow is correctly aligned and, once satisfied, tighten the bolts to both the upper and the lower bracket

**CAUTION!**

Before fully tightening the bolts that secure the air spring to the upper and lower brackets, set the vehicle at ride height (spring height approximately 22cm) and ensure that the springs are correctly aligned.



Spring out of alignment—
mounting plate axes
offset

Spring in alignment—
mounting plates parallel
and coaxial

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5.5 Load Sensing Valve modification

A vehicle with ABS doesn't need modification on the break system. If the vehicle has no ABS, the LSV system needs to be adjusted.

5.5.1 IVECO 30-8 / 49-12

- Bring the vehicle at driving height
- Take the note with the distance you have measured in 5.2 at page 8
- Adjust the LSV-rod, you only have to loosen the locking nuts (1x right and 1x left screw winding) and turn the middle rod till correct height is achieved.



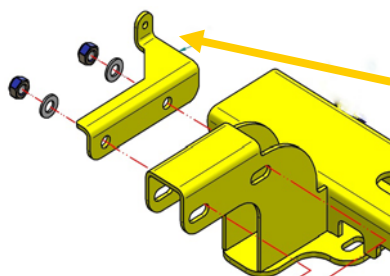
Measure at the same place and adjust till the same place is achieved

5.5.2 IVECO DAILY C

- Disassemble all the parts of the lever arm of the LSV including the rod attached to the rear axle (picture 1).
- Install the LSV modification bracket on top of the left upper bracket and attach the spring into the eye of the bracket (picture 2).
- After the installation needs the LVS to be adjusted. Loosen the nut in the middle of the LSV bracket and pull with a force 6.8 Kg on the adjust eye. Tighten the nut. You will have the correct break force again (picture 3).



Picture 1
Disassembling lever arm



Picture 2
Install. LSV mod. bracket



Picture 3
LSV adjustment

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5.6 Fitting of Inflator Console

Standard



Option 1



Option 2



Option 3



Your kit is supplied with one of the inflator console options shown above...

- 'Standard', having two valves only (above, top-left)
- 'Option 1', 'Option 2' or 'Option 3', having both valves and pressure gauges

Mount the console in a position of your choice whereby it is firmly fixed, has some protection from the environment (particularly important for the console with gauges) and is easily accessible. Suggested possible locations include...

'Standard' Console...

- on the rear bumper
- at the rear beside the license plate
- on the chassis next to a rear wheel
- in a service shutter
- beside the fuel cap

'Option 1', 'Option 2' or 'Option 3' Console...

- in the vehicle cabin, within reach and sight of the driver
- in the wall of a cupboard (motorhomes)
- in a service shutter

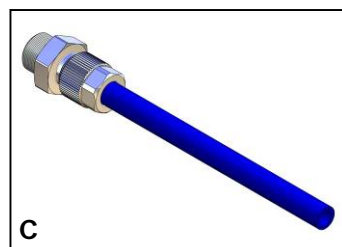
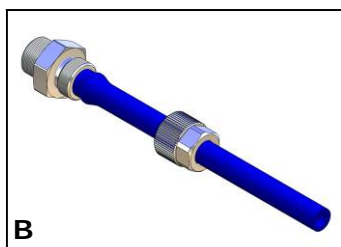
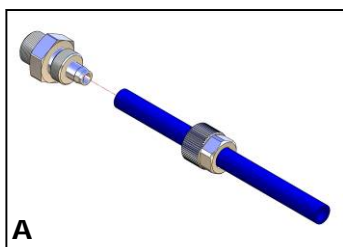
'Comfort' Packages

The 'Option 2' and 'Option 3' panels, as shown above, are each part of a *Comfort Package* that is supplied with a compressor (and also an air reservoir in the case of the 'Option 3' panel) for ease of spring inflation and ride height setting. For further information please ask your dealer.

5.7 Tube Connection and Disconnection, Cutting and Routing

Connection and Disconnection

Tubes are connected as shown by the diagrams below...



- A. Slide a nut over the end of the tube
- B. Push the tube onto the connector as far as possible
- C. Feed the nut up to the connector, fully tighten by hand and finally tighten one additional turn using spanners

Cutting

To achieve good sealing and air-tight fitting of tube ends to their connecting parts, it is very important to cut tubing cleanly and squarely. A dedicated guillotine action tubing cutter is recommended, or a craft knife if such a tool is not available. Do not use electrician's side cutters.



A dedicated tubing cutter -
Recommended



Electrician's Side Cutters
NOT Recommended

Routing

Study the underside of the vehicle and decide how to route each branch of the air circuit...

- To minimise the risk of chafing, avoid running tubing over metal edges as much as possible
- Avoid close proximity to heat sources such as the exhaust assembly
- Choose a route that provides as much protection as possible from dirt, debris and any solid objects that may impact the underside of the vehicle

It is recommended that tubes are guided alongside brake lines as much as possible.



Use cable ties ('tie wraps') to secure tubing to the chassis, taking care not to over-tighten them.

5.8 Spring Inflation

Once installation of the air assist kit is complete, inflate the springs via the inflator console taking careful note of the following...



Maximum and Minimum Pressure

Maximum Pressure 7.0bar

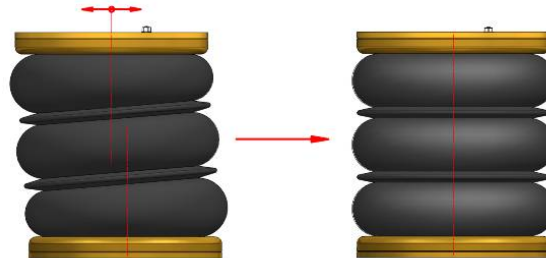
Minimum Pressure 0.5bar

Do not exceed 7.0bar (101psi), which is the recommended maximum charge pressure for the air springs.

The springs may be deflated if the vehicle is to be stored for a lengthy period without use, but a pressure of at least 0.5bar (7.25psi) should be maintained at all times in order to avoid possible compression damage to the springs.

It is wise to hand over the vehicle 24 hours after the installation is done. Just to assure the customer will leave with an airtight system.

5.9 Spring Alignment



Spring out of alignment
mounting plate axes offset

Spring in alignment
mounting plates parallel
and coaxial



CAUTION!

Before fully tightening the bolts that secure the air spring to the upper and lower brackets, set the vehicle at ride height (spring height approximately 22 cm) and ensure that the springs are correctly aligned.

5.10 Maintenance

Following installation, it is recommended that all metal parts are coated with a protective substance such as body wax.

The system does not require very much maintenance other than...

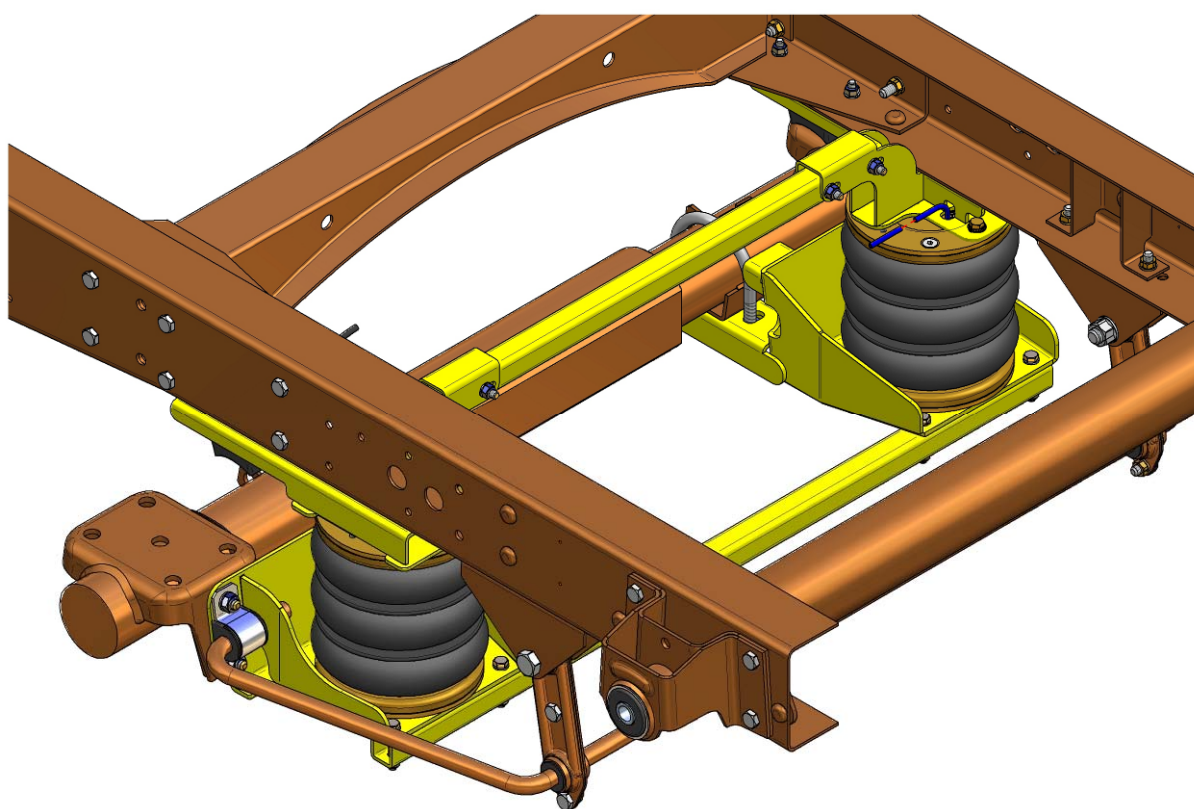
- ♦ to maintain air pressure in the springs. Much like a tyre, the system may lose a little air over time.
- ♦ to keep the air bellows clean. It is suggested that, when washing the vehicle, the bellows are inspected and cleaned as necessary (preferable by spraying). Look in particular for stones or grit trapped between convolutes, as this may damage the bellow.
- ♦ Check before and after the winter period the wax coating. Re-wax when necessarily

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5.11 Installation drawings



Iveco 30-8 / 49-12

Iveco Daily 35C / 55C

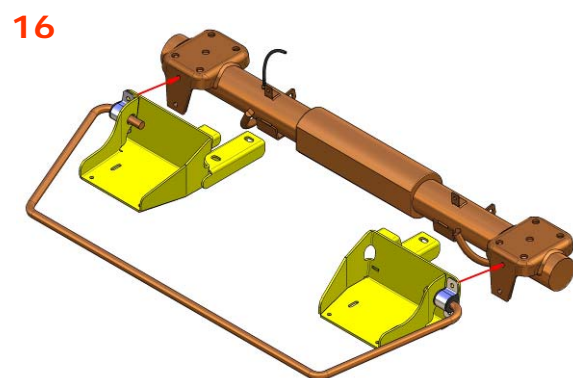
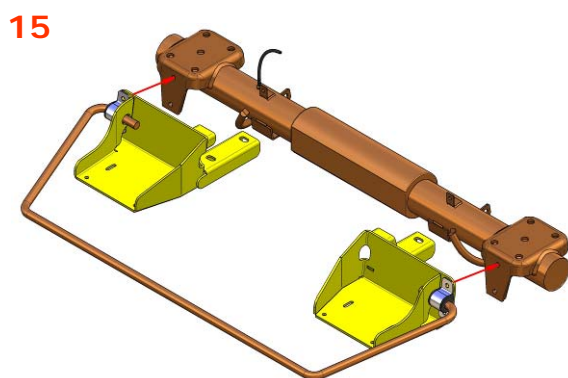
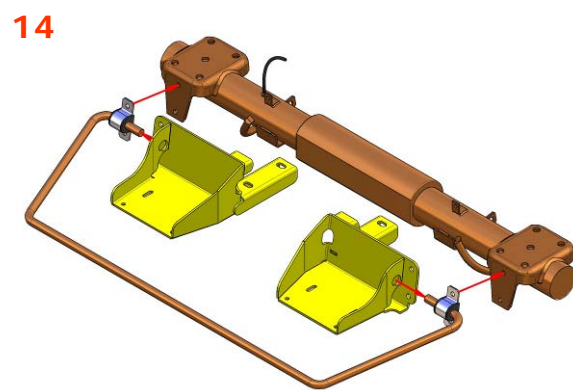
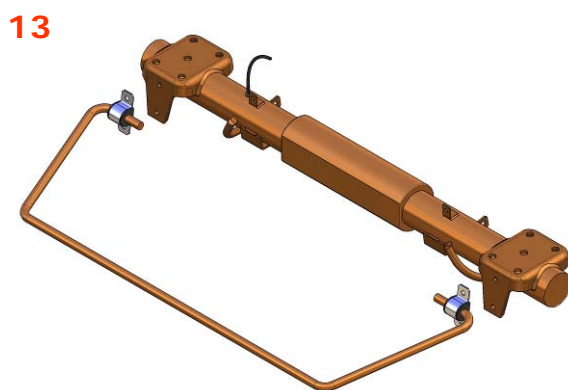
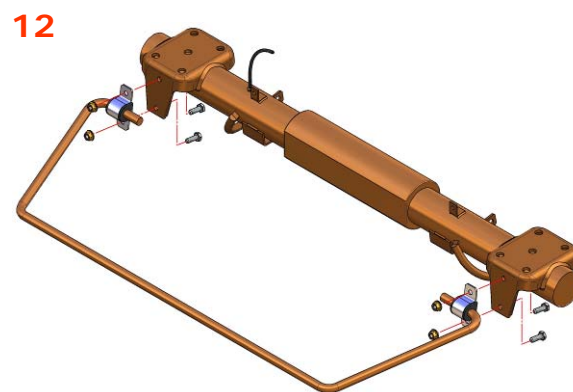
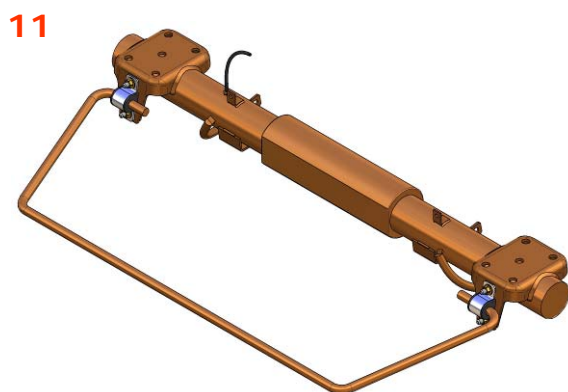
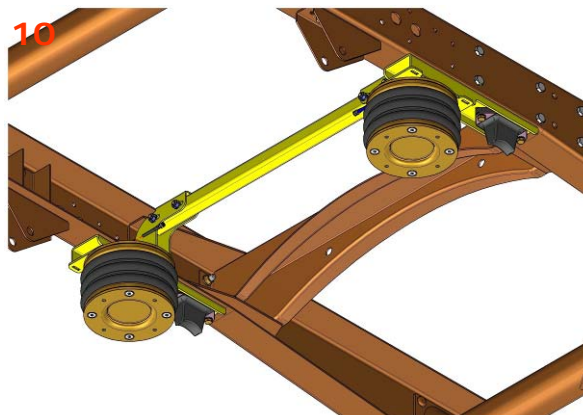
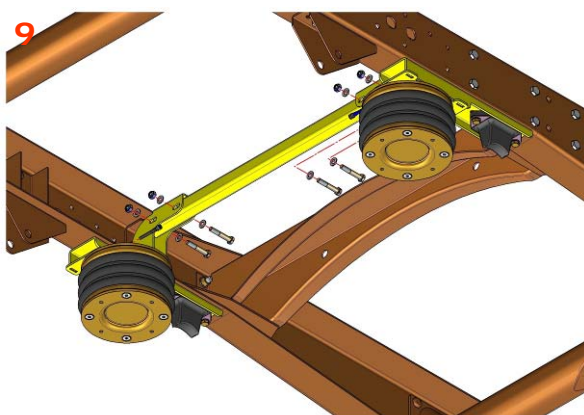
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Iveco Daily 35C / 55C

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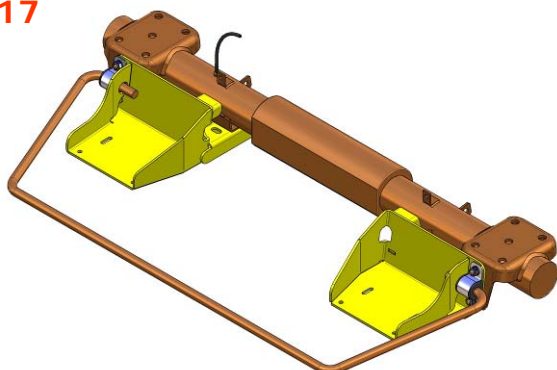


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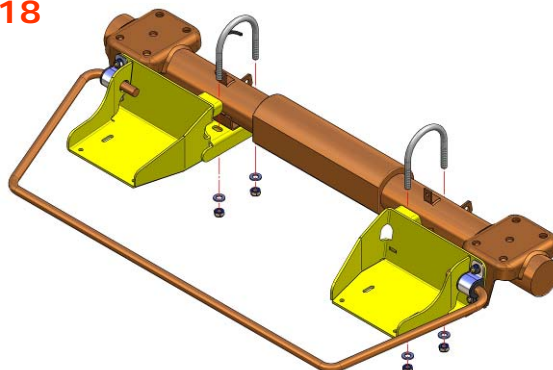
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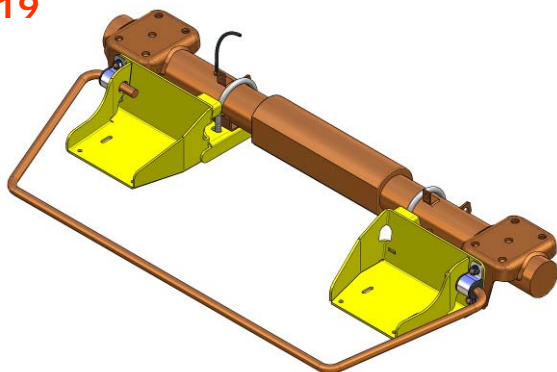
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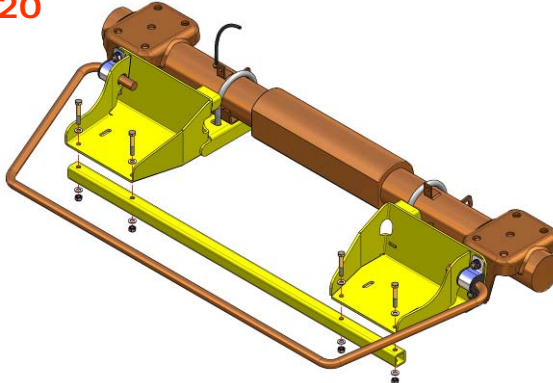
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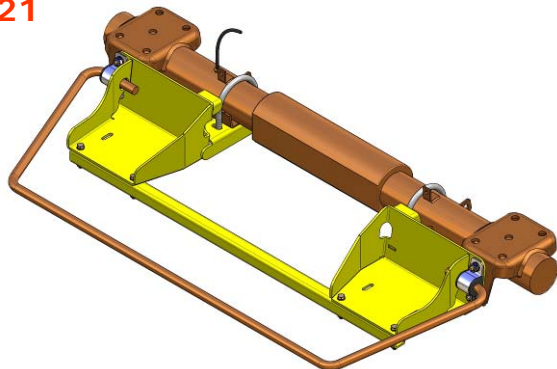
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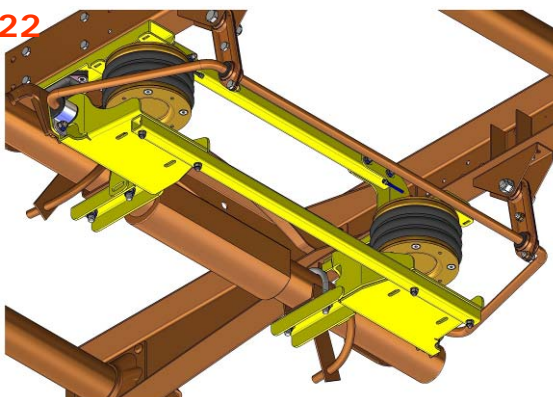
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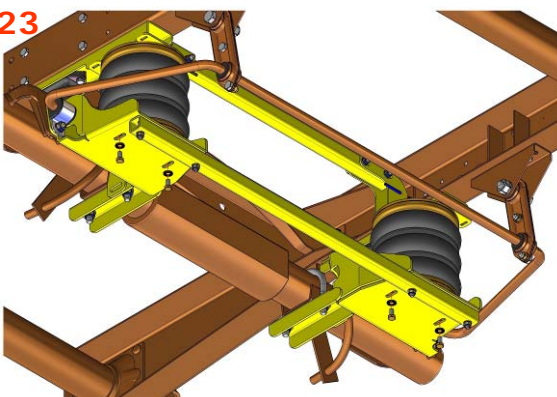
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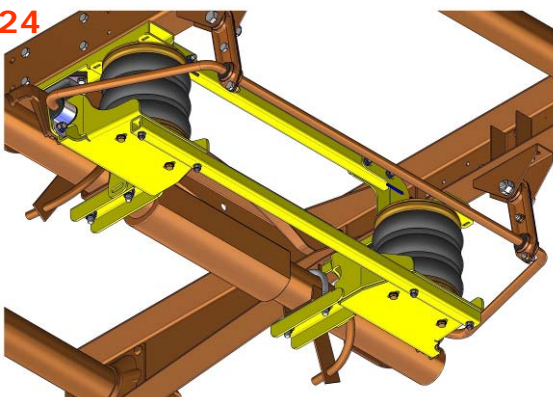
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6. EPILOGUE

Dunlop Systems and Components hopes that you enjoy the benefits that your air suspension system will provide for you. To ensure optimal performance, we advise that you have your system checked frequently by qualified personnel. As recommended in the fitting instructions, it is important to coat all the steel parts with a protective substance such as body wax.

IMPORTANT : Manufacturer's Declaration Form

A manufacturer's declaration form is provided with your kit. Following installation of the kit please ensure that this form is completed and signed by a qualified fitter, and that a copy is returned to Dunlop Systems and Components by post, fax or e-mail.

As a condition of your warranty, modifications to the system may only be carried out by personnel of Dunlop Systems and Components or an appointed agent.

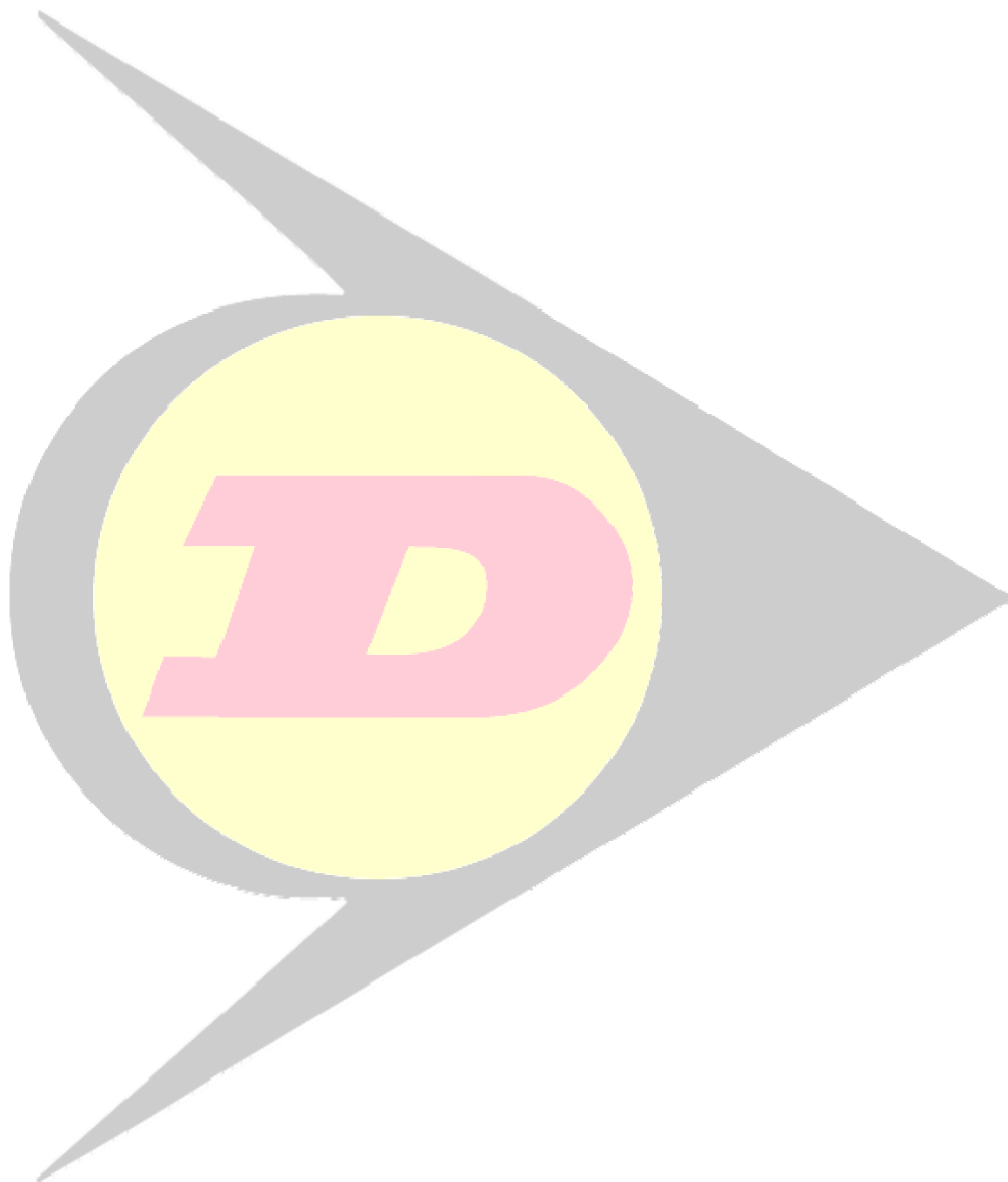
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